On obsession

It was Bertrand Russell who claimed that "the most savage controversies are those about matters as to which there is no good evidence either way". Oh Bertrand, you lived in a simpler age, and certainly one without the obsession with mindless controversy we have to put up with today. While there is a kernel of truth in his view, controversies rage today even in the presence of mountains of evidence. Two examples are obesity, and MMR.

A brief look at the telly in Britain in recent days has commentators telling us that society is obsessed with obesity, and decrying this. Yet the medical journals are replete with evidence about how obesity destroys our health, and how losing weight benefits it. Bandolier in recent issues has looked, for instance, at better outcomes with arthritis and erectile dysfunction associated with weight loss. This month it is diabetes and gout.

The prevalence of type 2 diabetes is rocketing, and only a few type 2 diabetics have BMI under 25. Despite very considerable efforts by primary care in the UK, few type 2 diabetics successfully lose weight, or have good glycaemic control, at least up to 2001. It remains to be seen whether changes since then will turn the corner. And most gout in fatter people is due to being overweight. Bandolier on the Internet has a huge new section on healthy living evidence and evidence of the benefits of making changes.

MMR is still treated as the "controversial MMR vaccine" on UK TV. The weight of evidence that there is absolutely no link to autism is now overwhelming. Yet as long as that moniker of controversial is hung round its neck like a dead albatross, people will think there is. Internet Bandolier has a downloadable essay on MMR and autism, useful for professionals and parents.

Healthy living has benefits hugely greater than anything medicine can deliver. Bandolier will continue to be obsessed, despite no support for doing so. Anyone out there care to help find the wherewithal for Bandolier to do more?

In this issue

Treating type 2 diabetes: how are we doing?

One of the key management tools in any organisation, large or small, is to know how well or badly you are doing. This information is too often lacking in healthcare, or at any rate is difficult to get at. A study from UK general practice [1] indicates that many things are being done better, but without as much impact as one might imagine.

Study

An anonymised primary care database with 142 practices in England and Wales provided the setting, with only the 74 practices with continuous recording over the years 1994 to 2001 being used. Patients had to be within the practice for at least six months in any one year. Records for type 2 diabetics were searched for information about BMI, blood pressure, Hb_{A1c} and cholesterol.

Results

There were about 500,000 patients in the 74 practices, 480,000 in 1994 and 525,000 in 2001. The number of type 2 diabetics rose from about 8,000 in 1994 to 13,000 in 2001. The prevalence of type 2 diabetes increased almost every year between 1994 and 2001 in both sexes (Figure 1), and at all ages. Overall the increase in prevalence was about 50%.

The proportion treated with diet only fell from 38% in 1994 to 33% in 2001, with small increases in the proportion

Figure 1: Prevalence of type 2 diabetes in England and Wales, by sex and year
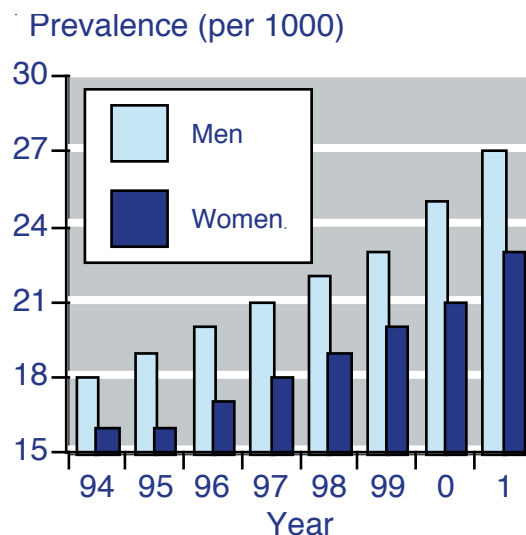
Table 1: Monitoring indicators and achieving targets

Indicator	Percentage measured	
	1994	2001
BMI	43	55
Blood pressure	65	82
Glycosylated Hb	34	74
Cholesterol	17	61
	Percent targets achieved	
BMI <25	27	19
BP <160/100	65	80
BP <140/80	12	21
Glycosylated Hb <7.5%	54	52
Glycosylated Hb <6.5%	29	23
Cholesterol <5 mmol/L	20	46

treated with oral hypoglycaemic drugs only, and insulin. Large changes in the types of oral agents used occurred over the period, with increases in metformin and short-acting sulphonylureas, and a large decrease in use of long-acting sulphonylurea. Other oral agents were used in under 5% of patients.

Monitoring improved significantly (Table 1), with large increases in cholesterol and Hb_{A1c} measurements, and small but significant increases in BMI and blood pressure measures. The proportion of patients achieving current quality targets of treatment was largely disappointing. Apart from cholesterol, where the proportion of patients achieving a target of less than 5 mmol/L rose (Table 1), and small improvements in blood pressure targets achieved, the proportion of type 2 diabetics with BMI below 25 and Hb_{A1c} below 7.5% or 6.5% actually fell.

Comment

Britain is undergoing a real-time, real-world, experiment, in which primary care quality targets have become one of the major driving forces for change. Most targets are based on good evidence, but the changes needed in the system have been uncomfortable, and arguably managed in a way most likely to cause resentment among the front-line troops.

Like any experiment, we have to wait for the results, and the results specific to this experiment will not be easy to discern, given ongoing rapid changes in medicine and healthcare practice. This study provides the background against which the real world experiment might be judged.

It also throws up a paradox. Despite greatly improved recording of health indicators and large changes in treatment patterns, the overall picture was one in which fewer, not more, targets were being met. Now these are post-hoc targets, not instigated until 2002, after data collection was concluded in this study, but it leaves open the question of what

was going on. The trends did not differ either in practices with the highest level of recording or in newly diagnosed diabetics, so neither of these provides a solution.

Perhaps the answer lies in the increasing weight of diabetic patients. It may be that the best of care is limited in what it can achieve in the face of greater obesity, so statins give better control of cholesterol but diabetes treatments cannot keep up. All this was going on before the immense concentration on obesity current in the last year or so. The next instalment will be interesting.

Reference:
1   S Lusignan et al. Trends in the prevalence and management of diagnosed type 2 diabetes 1994-2001 in England and Wales. BMC Family Practice 2005 6:13 (www.biomedcentral.com/1471-2296/6/13)

DIABETES MANAGEMENT

Bandolier 134 looked at glucose self-monitoring in type 2 diabetes. But glucose self-monitoring is only one intervention among many to help people with type 2 diabetes achieve better control and better quality of life. Several recent studies on management make useful additional reading.

Systematic review of diabetes programmes [1]

This review sought English-language studies in a number of electronic databases using a systematic approach to care and including more than one intervention. Guidelines, protocols, algorithms, care plans, or systematic education or provider education programmes were potentially included. Trials should have used an experimental or quasi-experimental study design using Cochrane criteria, mainly randomised trials or before-after studies. Various outcomes were used, like Hb_{A1c}, or screening visits for retinopathy, or patient satisfaction. Only adult patients were included in the review.

Results

Twenty-four studies were included, 19 randomised trials and five nonrandomised controlled studies. There were 6,400 patients in total, so many trials were small.

The results are summarised in Table 1. Other than glucose self monitoring and glycaemic control, programmes could show little benefit. The most likely reason was that studies were small and inadequate.

Large dataset evaluation [2]

Systematic reviews of inadequate data can be less than fulfilling, especially where organisational features are concerned. Indeed, systematic reviews of disparate interventions may be exactly the wrong way to seek knowledge. It is better to have a look at a single large organisation, and ask whether there are consistent features in those parts of the organisation that deliver best care.

Table 1: Results of studies of diabetes programmes

Outcome	Trials	Result
Glycaemic control	20	7 of 20 comparisons had significantly lower HbA1c with program, and overall the mean HbA1c level with program was 0.5% lower than the control intervention
Frequency of glycaemic monitoring	4	Some evidence that programs could help increase glucose self monitoring
Retinopathy screening	3	Small benefit
Nephropathy screening	3	Small benefit
Foot screening	3	Small benefit
Foot self-care	3	Mixed results
Systolic blood pressure	5	No overall benefit
Cholesterol	8	No overall benefit

There is one organisation that can do this better than any other, and that is the US Veterans' Affairs. It can do this because it looks after 3.7 million people, has centralised record keeping and analysis, but decentralised management and performance. It has the ability to keep up-to-date information on primary care practices where diabetics were treated, have key information on the diabetics, their medicine, laboratory tests, and general history, and their utilisation of healthcare services.

Using these datasets they sought patients with at least two outpatient visits with an associated diagnosis of diabetes, with a filled prescription for insulin, oral hypoglycaemic drug, or blood glucose monitoring supplies, and at least one visit to a VA primary care clinic. The outcome was Hb_{A1c} level, and organisational variables were used to examine which features were associated with lower or higher Hb_{A1c} at the 10% level or better (p≤0.1).

Results

There were 82,000 diabetics in 177 clinics. The average age was 66 years, with 36% taking insulin and 77% oral hypoglycaemic drugs. The average Hb_{A1c} level was 7.6%.

Many variables were associated with lower or higher Hb_{A1c} (Table 2). Not all of these were obviously related to direct clinical care. The organisational characteristics associated with better diabetic control were these:

- Integrating computerised health information systems into the care of persons with chronic illness, to produce reminders.
- Developing multidisciplinary teams, and other teams to address specific concerns.
- Actively involving physicians in quality improvement programmes.
- Monitoring the potential effect of staff reporting relationships on outcomes. This is part of team building.

Table 2: Organisational characteristics impacting on diabetic control

Characteristic	Impact (HbA1c %)
Features producing better HbA1c results	
Greater staffing authority	-0.28
All physicians involved in quality improvement	-0.25
Being a large academic practice	-0.25
Greater authority to establish or implement clinical policies	-0.21
Notifying patients of assigned provider	-0.21
Hiring needed new staff	-0.18
Computerised reminders	-0.17
Having nurses specific for the programme	-0.16
Greater use of gatekeeping	-0.16
Special teams or protocols for clinical issues	-0.13
Weekly multidisciplinary team meetings	-0.12
Features producing worse HbA1c results	
Quality improvement programmes do not involve all physicians	0.38
General internal medicine physicians only	0.20
Located in acute care hospital	0.20
Patients almost always see assigned provider	0.18

- Giving primary care programmes greater authority to implement clinical initiatives, and to develop staffing arrangements. This goes directly against ideas about targets and central direction.
- Notifying patients about changes.

None of this is rocket science, and any good professional manager would be expected to jot most of these requirements down on the back of an envelope in a few minutes as core values for the success of any venture. It's just that they are not often used in healthcare.

Real world experience [3]

What happens to type 2 diabetics with inadequate glycaemic control has been evaluated in a real world study from northern California. Kaiser Permanente looks after about three million people. It has excellent electronic database information.

All type 2 diabetics with Hb_{A1c} levels above 8%, with at least one year of membership of the scheme, without renal disease, and initiating a new therapy formed the setting for the study. Prescriptions for the dozen most commonly prescribed monotherapies and combination therapies were examined. There had to be at least one refill, and no evidence of the use of that therapy in the previous year.

The outcome was the Hb_{A1c} values at first occurrence of the end of the study (12 months after the start of therapy),

discontinuation of therapy, or modification of therapy. Good control was a level of Hb_{A1c} of 7% or below. Results were adjusted for different case mixes between therapies.

Results

The cohort consisted of 4,775 poorly controlled new users of therapy. Their mean age was 60 years, half were women, and the average starting level of Hb_{A1c} was 9.9%. At this time 30% of the general Kaiser diabetic population had a Hb_{A1c} level of 7% or below.

The most common therapy before starting a new therapy was sulphonylurea monotherapy. The most commonly initiated therapy was sulphonylurea plus metformin. Most diabetics (91%) were started on combinations of two or more oral agents.

Overall, 18% of diabetics starting a new therapy achieved good levels of Hb_{A1c} of 7% or below in the three months after the change. The overall average fell from 9.9% to 8.6%. Several therapies and combinations of therapies achieved significantly higher numbers of patients with good control (Table 3).

Several behavioural factors were also associated with better control. These included attending more than 70% of outpatient appointments, where 17% achieved good control compared with 11% in those who did not attend at least 70%. The frequency of self-monitoring of blood glucose was also associated with more people achieving good control.

Comment

What is really interesting about these three papers is that they make us look at how we amass and assess information on delivering a complex package of care. There are issues about particular interventions, and about how those interventions are delivered.

Despite having 24 randomised trials of various interventions in just 6,000 patients, the meta-analysis failed to provide much in the way of clear direction. By contrast, the VA study of 80,000 patients and 177 clinics was able to give us real direction about the components of packages of care that made a difference. Most had nothing to do with clinical interventions, and were about organisational issues. Targets were not mentioned. Clinics with all of the good features and few or none of the bad ones, obtained average

Table 3: Therapies for type 2 diabetes associated with good diabetic control

Therapy	Percent with HbA1c below 7%
Thiazolidinediones	25.7
Sulphonylureas + metformin + thiazolidinediones	25.1
Metformin + insulin	24.9
Sulphonylureas + thiazolidinediones	24.6
Metformin	17.1
Sulphonylureas	12.5

reductions of 2-2.5% in Hb_{A1c} levels more than clinics not having these characteristics. The UKPDS indicated that a 1% reduction in Hb_{A1c} levels leads to a 21% reduction in the risk of diabetes related complications and death, so the implications for patients of these and other clinics is very considerable. The Kaiser study, again made possible because of superb data collection, helps in looking both at particular interventions and behavioural factors when dealing with a difficult group of type 2 diabetics with poor control. There is almost enough information to write the book on how to run an effective diabetic service.

References:
1   K Knight. A systematic review of diabetes disease management programs. American Journal of Managed Care 2005 11: 242-250.
2   GL Jackson et al. Veterans affairs primary care organizational characteristics associated with better diabetic control. American Journal of Managed Care 2005 11: 225-237.
3   AJ Karter et al. Achieving good glycaemic control: initiation of new antihyperglycaemic therapies in patients with type 2 diabetes from the Kaiser Permanente northern California diabetes registry. American Journal of Managed Care 2005 11: 262-270.

HEALTHY LIFESTYLE FOR THE FEW

Bandolier 78 reported on the US nurses study, which showed that nurses who had a good diet, BMI of below 25, who took a reasonable amount of exercise, who drank alcohol moderately, and who did not smoke ran a risk of heart attack or stroke only about one fifth that of women who fulfilled only two of these five or fewer. The amazing thing was that of 120,000 women, only 3% (yep, 3 out of every 100) could say that they could pass all five of these not very difficult targets. If you took alcohol out, the figure rose to 7 out of every 100.

But these were nurses, so what was happening in the rest of the population? A new study [1] tells us, and the answer is a bit scary.

Study

This was a random telephone survey of people in all of the USA, restricted to adults aged 18 to 74 years. All results are by self-reported answers to a questionnaire on various lifestyle and other questions. Four categories of healthy lifestyle were created:

• Smoking (not)
• Weight (BMI 18.5 to 25)
• Food (five or more portions of fruit and vegetables a day)
• Exercise (30 minutes of moderate exercise five times a week)

Results

Complete information was available on 154,000 people. Overall, 76% did not smoke, 40% had a healthy weight, 23%

Figure 1: Percentage of US adult population with each of 0 to 4 healthy lifestyles
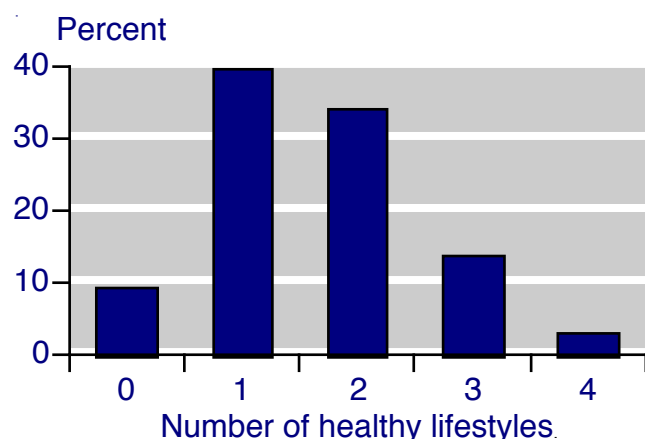
had a healthy diet, and 22% took regular exercise. Only a very few had three or more healthy lifestyles, with only 3% (yep, 3 out of every 100) having all four healthy lifestyles, most people having two or fewer out of four healthy lifestyles (Figure 1).

Healthy lifestyle adherence was associated with higher education, higher income, and better health. All four lifestyles tended to be more prevalent in people with excellent or very good self-reported general health, and lower in those with fair or poor health (Figure 2). The prevalence of all four healthy lifestyles was 5% in those with excellent general health, but only 1% in those with fair or poor health.

Figure 2: Healthy lifestyle adherence and self-reported health quality
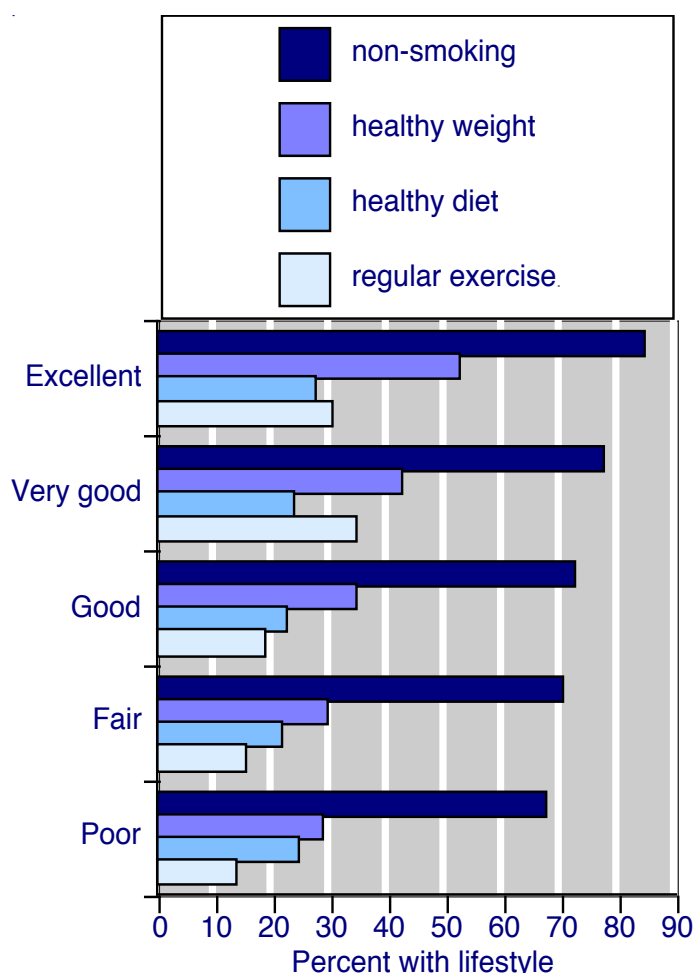
Comment

These results are pretty much like those found in the US nurses study, and reported in Bandolier 78. Few people, at least in the USA, but probably elsewhere, follow overall good lifestyles. We may be winning on smoking, but there is a long way to go on weight, diet, and exercise. Yet having all of these healthy lifestyles, plus a glass of wine or two a day, can massively reduce heart disease and strokes, and probably cancer, bone disorders, arthritis, depression, erectile dysfunction, and a whole lot more.

There are real public health lessons here. Single-issue preaching may be a waste of time. It is healthy living across the board that needs to be stressed, else healthcare costs will rocket and the lives of very many people will be miserable. Perhaps we should be stressing how much more fun it is being healthy.

Reference:
1   MJ Reeves, AP Rafferty. Health lifestyle characteristics among adults in the United States, 2000. Archives of Internal Medicine 2005 165: 854-857.

DRUG-INDUCED AGRANULOCYTOSIS

Agranulocytosis (abnormally low levels of some white cells in the blood) can occur when drugs cause injury to the bone marrow. It is a serious condition, and about 1 in 10 cases results in death. Drug-induced agranulocytosis is rare, perhaps affecting a few people per million of population per year.

Because it is rare, agranulocytosis rates are difficult to measure. It is difficult to know whether certain drugs cause agranulocytosis, and what the risk is. A new and rather good study from Barcelona helps [1].

Study

The population of Barcelona (about four million people) was observed from 1980 to 2001 for cases of agranulocytosis reported by 17 haematology units. All potential cases were found through weekly calls to the units, using defined definitions for agranulocytosis based on laboratory results. These included blood count results, and, usually, a bone marrow aspirate.

Exclusions included children under two years, patients receiving treatments (like chemotherapy or immunosuppressants) known to interfere with bone marrow function, or with conditions (like leukaemia or AIDS) known to involve impaired bone marrow function. Patients also had to be able to participate in interviews relating to drug use.

For each case four controls were selected randomly, and personnel unaware of their status, using a structured questionnaire, interviewed cases and controls. Details of drug use within the previous six months were obtained. Drug exposure was defined as use in the week before an index day, defined as the day when the first symptom of agranulocytosis occurred.

Results

There were 79 million person years of observation, during which there were 396 cases of agranulocytosis, with 273 admitted to hospital because of agranulocytosis (community cases) and 123 cases in which agranulocytosis developed during an admission. The overall incidence was 5 cases per million per year, with 3.5 per million per year for community cases. Incidence was similar in men and women, but increased with age (Figure 1), and more than half the community cases were older than 64 years.

Overall fatality in the four weeks after diagnosis was 9.1%, and 7% for community cases. Fatality was also age-related, and was much higher in those older than 64 years (Figure 2).

Drugs significantly associated with agranulocytosis in 177 community cases are shown in Table 1, together with the attributable incidence. These drugs accounted for about two-thirds of cases. For some of these there were few case and control patients receiving the drugs, with 10 or fewer for calcium dobesilate, spironolactone, and carbamazepine. No drug had an attributable incidence of more than one case per million population per year.
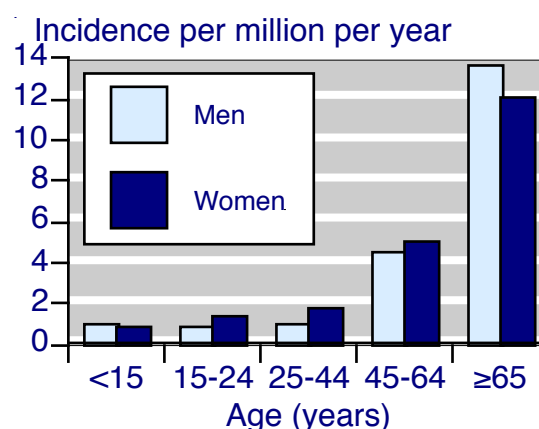
Comment

Agranulocytosis was defined according to sensible criteria, comprehensibly identified and followed up, in a large defined population with a universal free health care service of high quality, for over 20 years. Few cases were likely to be missed. These are great strengths of the study. Weaknesses were that for some drugs there were very few events, and some of the drugs significantly associated with agranulocytosis are not commonly used around the world, and some not now in Spain.

The study helps in several ways. It highlights those drugs that are likely to be associated with increased risk of agranulocytosis, helping to make sure cases are not missed. It tells us to keep a special look at older people on these particular drugs. And it also informs us of a lack of association with agranulocytosis for the many drugs used in a typical population.
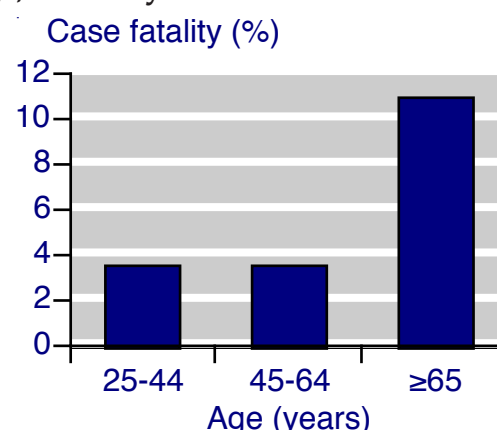
Figure 1: Agranulocytosis incidence by sex and age

Figure 2: Case fatality rate for agranulocytosis by age, over 20 years

Many questions remain unanswered. A Lancet editorial [2] has examined issues around agranulocytosis with dipyrone. Part of the problem is low numbers of events, and part is apparently varying rates associated with drugs in different parts of the world. There is still much to be learned.

References:
1 L Ibáñez et al. Population-based drug-induced agranulocytosis. Archives of Internal Medicine 2005 165: 869-874.
2 JE Edwards, HJ McQuay. Dipyrone and agranulocytosis: what is the risk? Lancet 2002 360: 1438.

Table 1: Drug-related agranulocytosis for those with a statistically significant association, giving numbers of patients using the drug in cases and controls, odds ratios, and attributable incidence

Drug	Numbers Cases 177/Control 586	Odds ratio (95% CI)	Attributable incidence (per million per year)
Ticlopidine hydrochloride	20/1	103 (13 to 840)	0.39
Calcium dobesilate	9/1	78 (4.5 to 1300)	0.17
Antithyroid drugs	13/1	53 (5.8 to 480)	0.25
Dipyrone	30/9	26 (8.4 to 79)	0.56
Spironolactone	6/4	20 (2.3 to 180)	0.11
Carbamazepine	5/1	11 (1.2 to 100)	0.09
Sulphonamides	11/5	8.0 (2.1 to 31)	0.19
ß-lactam antibiotics	27/17	4.7 (1.7 to 13)	0.42
Diclofenac sodium	10/11	3.9 (1.0 to 15)	0.14

VITAMIN E FOR DYSMENORRHOEA

Bandolier was asked to comment on a media report that vitamin E had proved to be a useful treatment for dysmenorrhoea, and because vitamin E is sold as a nutritional treatment. A literature search showed that at least three randomised trials had been performed over 50 years, so a quick systematic review seemed in order. The upshot seems to be that this is an effective treatment, with consistent results from three trials.

Search

The search was confined to PubMed and Cochrane library, and used broad terms of vitamin E and dysmenorrhoea or dysmenorrhea. Abstracts were read and possible randomised trials were obtained and read in detail. For inclusion studies had to be both randomised and double blind, investigate vitamin E at any sensible dose or duration of use, in women with primary dysmenorrhoea, and use pain or some related measure as an outcome.
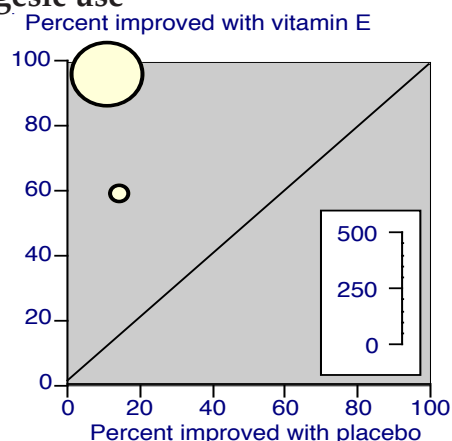
Results

Three studies were found, one from 1955 performed in Cardiff [1], and two recent studies from Tehran [2,3]. Details of the studies are in Table 1. All of them studied young women, for between two and four months, using different doses of vitamin E, for different periods before and during menstruation, and used different measures of pain.

Figure 1: Trials of vitamin E for dysmenorrhoea, improvement or much reduced pain or no analgesic use

All three studies found that menstrual pain was diminished by vitamin E more than placebo, and the two longer studies found that maximum effect occurred by about three months. The two longer studies had dichotomous outcomes, of pain reduction by a useful amount [1], or non-use of analgesics [3].

Pooling these two (Figure 1) showed a highly significant result. A good result occurred in 155/176 (88%) of women on vitamin E and 20/174 (11%) of women on placebo by three or four months. The relative benefit was 7.7 (95%CI 5.1 to 12) and the number needed to treat for one woman to benefit compared with placebo was 1.3 (1.2 to 1.4).

Table 1: Randomised trials of vitamin E for primary dysmenorrhoea

Reference	Design	Treatment	Results
Butler & McKnight, 1955 [1]	Randomised, double-blind, parallel group (QS=5/5) Undergraduates (n=100) with spasmodic dysmenorrhea, but normal regular menses	50 mg vitamin E three times a day (150 mg total) or matching placebo, for three consecutive months for 14 days starting 10 days before period Only withdrawals due to vacation	After 3 months more women had improved by two or more pain stages (out of four) with vitamin E 22/37 vitamin E 5/35 placebo Better results at three rather than one or two months Adverse events were not reported
Ziaei et al, 2001 [2]	Randomised, double-blind, parallel group (QS=4/5) High-school students, mean age 17 years (n=100) with mild to severe pain	100 units vitamin E five times a day (500 units total) for 5 days starting two days before period for two consecutive months	Significant fall in average pain for both vitamin E and placebo, but significantly greater fall with vitamin E Adverse events were not reported
Ziaei et al, 2005 [3]	Randomised, double-blind, parallel group (QS=5/5) High-school students, mean age 17 years (n=278) with mild to severe pain	200 units vitamin E twice daily (400 units total) for 5 days starting two days before period Minimal withdrawals for four consecutive months	Initial average pain score of 6/10 (VAS) did not change with placebo, but fell to 3 at two months and 0.5 at four months with vitamin E. Duration of pain initially averaged 18 hours, and did not change with placebo, but fell to 4 hours at two months and 2 hours at four months with vitamin E Use of supplemental ibuprofen: 4% vitamin E 89% placebo Adverse events were not reported

Comment

On the face of it, this looks like a useful result. Well-conducted trials 50 years apart in different parts of the world gave similar results. Nor is it just a shade of statistical significance, but a result of large clinical relevance, with benefits to the majority of young women receiving vitamin E. So far, so good. We should note that a fourth trial [4], using only 1.5 mg vitamin E along with lots of fish oils, failed to show any benefit.

There are some caveats, however. First is that none of the studies mentioned adverse events, and that is something that should always be important. It may be that there were none, but no trial stated that there were none. They just failed to mention adverse events. The second caveat is whether vitamin E could be harmful. A meta-analysis of vitamin E supplementation trials indicated a small increase of mortality in people taking vitamin E [5]. The size of the increase was not great (39 per 10,000 persons), was barely statistically significant, applied only to high-dose studies (400 IU/day or more), used for long periods, and mostly in small studies in older patients with chronic diseases. Other meta-analyses [6] using only larger studies found no difference in mortality.

So any move to using vitamin E for treating dysmenorrhoea needs to be cautious, and young women thinking of self-treating should be advised to use small doses for a few days before and during their period, and no longer.

References:
1   EB Butler, E McKnight. Vitamin E in the treatment of primary dysmenorrhoea. Lancet 1955 i: 844-847.
2   S Ziaei et al. A randomised placebo-controlled trial to determine the effect of vitamin E in treatment of primary dysmenorrhoea. British Journal of Obstetrics and Gynaecology 2001 108: 1181-1183.
3   S Ziaei et al. A randomised controlled trial of vitamin E in the treatment of primary dysmenorrhoea. British Journal of Obstetrics and Gynaecology 2005 112: 466-469.
4   Z Harel et al. Supplementation with omega-3 polyunsaturated fatty acids in the management of dysmenorrhea in adolescents. American Journal of Obstetrics and Gynecology 1996 174: 1335-1338.
5   ER Miller et al. Meta-analysis: high-dosage vitamin E supplementation may increase all-cause mortality. Annals of Internal Medicine 2005 142: 37-46.
6   DP Vivekananthan et al. Use of antioxidant vitamins for the prevention of cardiovascular disease: meta-analysis of randomised trials. Lancet 2003 361: 2017-2023.

GOUT RISK AND OBESITY

We know that weight is involved in gout, because serum uric acid levels are increased in people with higher BMI, and can fall when weight is lost. A large US study [1] gives us some real figures about weight and risks of gout.

Study

This was a prospective study of a large number of male health professionals aged 40-75 years at the start in 1986. Prospective follow up over 12 years included considerable numbers of assessments of anthropomorphic variables, of diet, health outcomes, and medical conditions. Gout diagnosis was determined every two years, and specific questionnaires ensured that diagnosis was according to standard criteria.

Results

The 47,000 men without gout initially formed the cohort, with 730 confirmed new cases of gout (1.6%) over the 12 years of study. Gout incidence was significantly related to initial BMI (Figure 1), as well as BMI at age 21 years, and initial waist to hip ratio. Men who had gained weight by more than 12 kg since age 21 had a significantly increased risk of gout (by about twice). Men who had lost more than 6 kg since the start of the study had a significantly reduced risk of gout (by about 40%).

After adjusting for age, weight, and diuretic use, hypertension increased the risk of gout by two to three times. After adjusting for age, weight, and hypertension diagnosis, diuretic use increased the risk of gout by two to three times.

Figure 1: Gout incidence over 12 years, and relationship to initial BMI

Gout cases per 10,000 men over 12 years
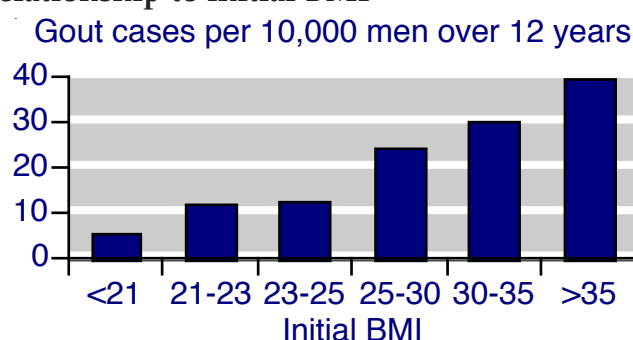
Comment

This is an important contribution to the information we have about obesity and gout, mainly because it is large and prospective. It confirms what we know, that increased weight is associated with gout. Most gout cases are attributable to excess weight, especially where the BMI is over 25. It also confirms that losing weight reduces the risk of developing gout. Weight loss reduces uric acid. This is yet another reason why it is not a good idea to be fat.

Reference:
1   HK Choi et al. Obesity, weight change, hypertension, diuretic use, and risk of gout in men. Archives of Internal Medicine 2005 165: 742-748.